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THE RAINFOREST DRAGONS

by Jo Gregson

There are three species of cassowary. The largest is the Southern Cassowary *Casuarius casuarius* found living in New Guinea and the Aru Islands and also north-eastern Queensland, Australia. Then there is the Northern (Single-wattled or One-wattled) Cassowary *C. unappendiculatus* found living in the lowlands of New Guinea, Yapen Island and west Papuan islands, followed by the Dwarf Cassowary *C. bennetti* found living in New Guinea, Yapen Island and New Britain. As many as 42 subspecies have been described.

Walter Rothschild (1901) described eight species and 17 subspecies. The plates by John Keulemans that accompanied Rothschild's notes were published in the *Transactions of the Zoological Society of London* of that year. Keulemans worked from live birds, so one would assume that they are accurate. From Rothschild's descriptions of those imported into Europe, many would seem to have been *C. c. beccarii* and *C. c. violicollis*, both found on the Aru Islands. These are big and aggressive birds with two red markings running from the base of the lower mandible to the top of the wattles. More recently birds from the Aru Islands have been grouped together and reclassified as a single subspecies *C. c. aruensis*. However, within the current European zoo population there is quite a lot of variation in size and, I suspect, there is a mix of birds from different parts of the New Guinea region. Australian birds have a plain blue throat and are often smaller and seem to be more biddable (docile) than some of the others.

All three species are under pressure, with the primary threats coming from deforestation, busy roads, domestic dogs and feral pigs. In some areas they are also hunted by man for food. On top of this climate change is playing a part with the rainforests beginning to become drier.

In captivity

There is a good number of cassowaries still being held in zoos. They can live for up to 40 years, although it is unlikely that females continue to lay



Keuleman's illustration of
Casuarus c. beccarii published in 1901.



Many of those imported into Europe seem
to have been *Casuarus c. beccarii* and
Casuarus c. violicollis (above).



Casuarius c. australis, the Australian subspecies, later became *Casuarius c. johnstonii*.



A trio of Southern Cassowary chicks three to four weeks of age.

eggs beyond 20 years of age and probably stop some time before this.

If the large ratites have any claim to intelligence, then the flag-bearer is the cassowary. Very fast, powerful birds, with an air of indifference,

cassowaries can and have killed people. Females are especially ill-tempered and even the males keep out of their sight until their services are required for mating, incubating the eggs and rearing the chicks.

Cassowaries can run at speeds approaching 50km/h (30mph) and jump 1.5m (approx. 5ft) from a standstill. The legs are robust with three toes on each foot and with each toe armed with a long, stout claw. When annoyed cassowaries display their full throat colour and make loud, guttural rasping noises and attack by jumping up and kicking forward with both feet. It had been said that the mythical dragon stories arose from early sightings of cassowaries. It is not easy to know when a cassowary is in a bad mood, as they often stand quietly preening prior to an attack. It is advisable to err on the side of caution and manage them by means of gates and sliding doors.

Cassowaries being forest creatures need plenty of cover and like many rainforest animals their feet cannot cope with hard, dry surfaces and, for this reason, they should have access to mud and a pool of water. Given the opportunity, they will spend much of their time standing in water. In the past collections often exhibited these birds quite poorly and not in keeping with their natural history.

At least two paddocks are required to safely manage and breed cassowaries. Here at Paignton Zoo we have five paddocks, all connected to each other, so that we can move the birds without the need to capture them. The connecting gates are fitted with thumb latches and can, if need be, swung closed quickly from the outside of the paddock. Each paddock has a heated house, which is connected by a dividing door to the next stall.

Cassowaries are prone to slip on hard, smooth surfaces and their legs can become splayed. To help prevent this all house floors and pools must have a rough finish with a wooden float. Likewise, the floor of any crate used to transport them must have a slatted floor. The use of limestone as a hard-standing substrate should be avoided, as cassowaries will avoid walking on it and will soon become lame if forced to stand on it for any length of time.

For much of the year cassowaries live a solitary life and need to be housed separately. They do not acknowledge each others' presence until early spring, when they are seen standing close together against the fence that separates them. Pairing can be a dangerous time for the male. He is safe so long as he stands close to the female and, therefore, rarely leaves her side during courtship. After he has copulated with her, she will attack him and, for this reason, it is important that there is thick vegetation in the enclosure. If he can run away and get out of sight of her, he will soon be forgotten. Eventually, he will work his way back to her side and the process will begin again.

The female chooses the nest site and lays up to five green eggs. If she

selects an unsuitable site, it is possible to move the clutch after the last egg has been laid and before the male begins incubation. The eggs range in size from 149mm-140mm x 99mm-96mm. Here at Paignton Zoo we have recorded the following egg weights: 850g, 838g, 847g, 824g, 735g 762g, 754g. The first eggs laid are usually smaller. The female is removed before hatching takes place.

Chicks

Chicks are reared on a low protein fruit diet. Foods that are coloured red or yellow are eagerly investigated and help get them feeding during the first few days. Within the first week, as the chicks become steadier on their feet, they are taken outside each day for light exercise. To rear strong chicks it is important that they grow slowly and get plenty of exercise.

As they grow stronger, each day they are taken for longer walks in our woodland and allowed bathe in a stream. By the time they reach 10 months of age they need to do a lot of walking and have a run each day. Chicks will walk with a keeper until they are about 18 months of age, after which it becomes harder to engage their attention and prevent them from wandering.

From 18 months of age cassowaries can be sexed by someone with an experienced eye. Females are larger and longer-backed by then and are already showing signs of becoming stumpy. At three years of age they have acquired full black plumage and at this age keepers no longer work in the enclosures with them.

All in all, cassowaries are very rewarding birds to display and so long as they are managed correctly can be high profile exhibits.

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SOCIAL MEETINGS 2011

On Saturday, May 7th, the society has been invited to visit Richard Abrey's collection at Edwardstone, Sudbury, Suffolk.

The President's Garden Party will be held on the afternoon of Saturday, July 16th, at Chestnut Lodge, Cobham, Surrey.

It has now been confirmed that the Autumn Meeting will be on Saturday, September 24th, at Paultons Park, Ower, Romsey, Hampshire.

THE CUCKOO FINCH *Anomalospiza imberbis*

by Neville Brickell

Introduction

This most attractive species is unfortunately rarely seen in captivity, except in the aviaries of local birdkeepers here in South Africa. It was first described from East Africa by Cabanis in 1868 and described originally as a new species of canary *Crithagra imberbis*. Thirty-six years later, in 1904, however, on the basis of its wing shape, the outer primaries being like those of the bishops/weavers *Euplectes* spp. and *Quelea* spp., it was thought instead to be related to the weavers (Ploceidae) and in some recent field guides can still be found alongside them listed as the Parasitic Weaver. Payne (1997) wrote that preliminary molecular studies of mtDNA sequences indicate that the Cuckoo Finch and the viduine whydahs and indigobirds are each others' closest relatives. Clements (2007) places it at the end of the 20-strong Viduidae family, but retains the name Parasitic Weaver.

Description

Length 4½in-5in (11cm-13cm). In the field the male can easily be confused with a canary (*Serinus* sp.), except that he has a short bill that is very thick at the base. It is black during the rainy season and pale brown in the dry season. (Cuckoo Finches in West Africa have noticeably smaller bills than those in East and southern Africa.) In the dry season, when males are in fresh plumage they are olive greenish above, including the crown, and unstreaked yellow below. During the rainy season, when they breed, males are in worn plumage and are brighter, paler and more streaked above, with the head, especially the forehead and face, yellow. The adult female has tawny-buff or buffy-brown upperparts, broadly streaked with black, a yellowish-buff face with a blackish eye-stripe and finely streaked cheeks, a buffy-white throat and a buffy-brown breast, with faint streaking on the flanks; the belly and under tail-coverts are whitish. As the plumage becomes worn, she becomes paler and less tawny, with sharper streaking. She looks similar to the female Red Bishop *E. orix*, but has a much stubbier bill (and a much harder bite). The juvenile Cuckoo Finch looks similar to the adult female, but with the face, throat and breast, rich tawny-buff or orange-buff to yellowish-buff. The belly and flanks are buff, the latter sometimes finely streaked with black. The characteristic stubby bill is yellowish below. The juvenile Cuckoo Finch superficially resembles a juvenile cisticola.

Voice

Various calls have been described, including a high, thin, sibilant "tissiwick" (rising) and "tissaway" (falling), often followed by a "djzing-



Neville Brickell

Male Cuckoo Finch.

ji-ji,” as well as a separate “*dzi-bee-chew*” (Zimmerman et al. 1996). The flight call is a thin, high, hard “*jit jit*,” or “*tikka tikka*.” Unlike the whydahs and indigobirds, young Cuckoo Finches do not mimic the begging calls of the host species.

Distribution

Clements (2007) lists two subspecies: *A. i. imberbis* found from Ethiopia through East Africa, including Pemba Island and Zanzibar, to southern Zaïre (Democratic Republic of Congo) and south-central Africa to South Africa; and *A. i. butleri* found from West Africa to southern Sudan and northern Zaïre (Democratic Republic of Congo). It is generally uncommon in West and East Africa, but becomes more plentiful in Zambia, Zimbabwe, Mozambique and Swaziland, and uncommon again in the South African provinces of Gauteng and KwaZulu-Natal.

Habitat

Open and lightly wooded grassland with short or tall grass, especially near damp areas, also floodplains and cultivated land, including rice paddies, pastures and old cotton fields, as well as airfields.

Habits

Solitary, in pairs or in small or large flocks in all seasons. In non-breeding season, forms flocks of eight to 50 birds and, occasionally, up to 200-1,000 birds (in Hwange National Park in Zimbabwe). When disturbed, often flies up and perches on shrubs, low trees, fences and telephone wires. Roosts in reedbeds in flocks of 300-500 birds or, more rarely, up to 1,200 birds in non-breeding season. In south-central Africa, it is regarded as a resident and a local, nomadic species or migrant, moving about according to the rainfall, with numbers varying from year to year. In Zambia, large flocks gather at permanent wetlands during the dry season and disperse during the rains, possibly moving substantial distances. Large flocks arrive in southern Zambia in late November, with up to 6,000 roosting in reedbeds, but all dispersing by mid-December. The Cuckoo Finch's flight is direct and rapid, like that of a weaver bird.

Feeding

Forages on the ground, pecking seeds from the surface of the soil and also perches on the upright stems of grasses and herbs, taking seeds directly from the seed heads. It has been recorded feeding on Golden Bristle Grass or Golden Setaria *Setaria sphacelata* and Common Wild Sorghum *Sorghum verticilliflorum*, as well as feeding on the large, hard and difficult to crack seeds of sedges *Scirpus* spp. and sunflowers *Helianthus* spp. The host species rear the young on insects such as grasshoppers and caterpillars, but the adults eat mostly grass seeds, but have been observed hawking insects from reed stems at dusk.

In captivity in South Africa, the Cuckoo Finch is usually offered Japanese millet, red manna, white or yellow millet and shelled sunflower seeds. In the summer it is also offered the inflorescences of Guinea Grass *Panicum*

maximum, Barnyard Grass *Echinochloa crus-galli*, Jungle Rice *E. colona* and Common Wild Oats *Avena fatua*, in both the ripe and half-ripe milky stages. Finely ground cuttlefish bone and/or oystershell are also provided. Livefood consists of the winged form of the Common Fungus-growing Termite *Odontotermes badius* and workers of the Large Fungus-growing Termite *Macrotermes natalensis* and Snouted Harvester Termite *Trinervitermus* sp. It is vital that the soldiers are removed, as they can become lodged in birds' throats and birds rarely survive their bite.

Breeding

The Cuckoo Finch breeds during the rainy season at the same time as the grass warblers *Cisticola* spp. and *Prinia* spp., which are its host species. In Ethiopia nestlings have been seen in August and November and in Tanzania in May. In Zambia it breeds from January-April; in Zimbabwe it lays from November-March (with 19 out of 25 records in December-February); in Botswana from February-April; Mozambique in February; and north-eastern South Africa from September-January/February (with 12 out of 14 records in December-January).

The list of host species include: the Cloud Cisticola *C. tetricus*, Croaking Cisticola *C. natalensis*, Desert Cisticola *C. aridulus*, Fan-tailed or Zitting Cisticola *C. juncidis*, Levallant's or Tinkling Cisticola *C. tinniens*, Neddicky or Pipping Cisticola *C. fulvicapilla*, Pale-crowned Cisticola *C. cinnamomeus*, Pectoral-patch Cisticola *C. brunnescens*, Rattling Cisticola *C. chiniana*, Red-faced Cisticola *C. erythrops*, Singing Cisticola *C. cantans*, Winding or Rufous-winged Cisticola *C. galactotes* and Wing-snapping Cisticola *C. ayresii*, along with the Black-chested *Prinia* *P. flavicans* and Tawny-flanked *Prinia* *P. subflava*, most of which live in wet grassy areas.

Cisticolas usually nest close to the ground or at ground level in a tuft of grass or a low shrub. All build an enclosed, ball-shaped nest, using blades of dry grass to make the outer shell and incorporate live plant stems into the walls and roof; the nest is lined with plant down. Most have a side entrance. So far as is known, the female does most or all of the nest building and incubation without the assistance of the male, but both sexes feed the young. The Tawny-flanked *Prinia* usually nests less than 1m (3ft 3in) above the ground in a leafy shrub, sapling or tall tuft of grass or sedge, often over shallow water or damp ground, whereas the Black-chested species usually chooses a small, thorny tree or shrub, usually one that stands alone. Both *prinias*' nests, which are made from thin lengths of green grass, which soon fade to a dry grass colour, are oval- to pear-shaped, with an entrance near the top of one side.

The female Cuckoo Finch lays one egg a day in sets of one to four eggs, with a few days between sets. A total of about 30 eggs may be laid

during a breeding season. The eggs vary from bluish white to greenish blue or pale turquoise. Occasionally they may be unmarked, but are usually spotted, speckled or blotched with red, reddish brown or purplish brown over underlying lilac and grey markings. They measure 16.1mm-18.3mm x 12.2mm-13mm (Hockey et al. 2005). They can usually be distinguished by differences in colour and markings and their larger size.

The Cuckoo Finch removes one or all of the host species' eggs before laying, sometimes before the host species' clutch is complete. One or two Cuckoo Finch eggs may be laid in a nest, but it is not known whether or not this is a result of more than one female laying in the same nest. They hatch within about 14 days.

The skin of the newly-hatched chicks is dark purple above and a dark flesh colour below, with white down on the crown, back and wings. The gape flanges are deep orange-yellow. The tongue is purplish pink, with large black spots near the rear. By 13 days the face and heavy eye-stripe are cinnamon-orange, as is the throat, with the underparts fading to yellow on the belly. The chicks, which are fed mainly insects, have an upright begging posture, without any twists or turns of the head and neck.

The nestling/fledgling period lasts 18-20 days. They are fed for at least 10 days after fledging, then begin to feed themselves, but remain under the care of the host species for several weeks. Two Cuckoo Finch chicks may be reared in the same nest, but the host species' chicks rarely survive.

Natal Avicultural Society's only captive record dates back to 1966 when two eggs, collected from the wild, were hatched and the chicks reared by a pair of second-generation Brimstone Canaries *S. sulphuratus*.

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BREEDING THE MAGPIE SHRIKE *Corvinella melanoleuca*

by Gary Bralsford

The Magpie Shrike is a long-tailed shrike measuring approximately 45cm (17½in) in length, of which about 30cm (12in) is accounted for by its long tail. Both sexes are black with white scapulars that form a V-shaped pattern on the back; the rump is greyish-white; the secondaries and primaries are tipped with white and there is a variable patch of white at the base of the primaries. The female can be distinguished from the male by a patch of white on her flanks. The juvenile is dull black above, finely barred with rufous-brown, with the whitish scapulars tipped with brown and the flanks blackish with brown barring and some buffy-white feathers.

It is found in Africa from south-eastern Angola in the west and south-west Kenya and Tanzania in the east, southwards down into South Africa and eastern Swaziland. Three subspecies are recognised: *C. m. aequatorialis*, *C. m. expressa* and *C. m. melanoleuca*. They differ from each other by the amount of white on the wings, the shade of grey of the rump and the length of the tail. They inhabit open acacia and broad-leaved woodland with scattered trees, short grass and bare ground.

These shrikes are sociable birds that usually live in small groups of six or so birds, but larger groups of 10-12, or even up to 19 (in the winter) have been recorded. The individuals within the group interact with one another. This appears to be based on a dominance hierarchy, with the breeding female being the most dominant bird. Although generally shy and difficult to approach, my birds soon settled down to aviary life. They perch as high as possible and sit upright and often flick their tails while calling. When my birds come together on a perch or on the ground they face one another and perform a greeting display. This involves bowing, raising the wings and flicking the tail, while making various whistling calls. My young birds always perform the same greeting before begging to be fed, even after they are weaned. The territorial behaviour is similar, with the breeding pair giving loud whistles which usually take the form of a duet. The pair fly at intruders and I had to wear a hat, especially when there was young in the nest, as the pair attacked me when I went in to feed them.

In the wild these shrikes often choose a conspicuous perch on the top of a bush or tree, from which they can scan the ground below and swoop down on their prey. Groups tend to leave a bush or tree one by one, following each other to the next bush or tree. Their distinctive, fluttering, undulating flight reminds me of that of the Hoopoe *Upupa epops*. My birds behave in a similar way in the aviary. I put in tubs of livefood and they swoop down and

take it - the dominant bird always being the first down. They occasionally hawk flying insects and I sometimes throw morio worms up in the air for them to catch. I also give them dead day-old chicks, mice and pinkies. Most of the food is carried in the bill, but they always use a foot to hold it down and tear off pieces.

In the wild the Magpie Shrike is confined to Africa south of the Equator, where breeding has been recorded from August-April; the majority of breeding though occurs from September/October-January. My birds began breeding in March and continued through until July. They displayed with the male feeding the female and then the two singing in duet. The female often begged for food from the male like a youngster would, crouched in a horizontal position with the wings slightly open, drooped and fluttering.

I bought my six Magpie Shrikes from a dealer in the Midlands (here in the UK) and kept them together as a group. I placed them in a planted aviary measuring 10ft x 10ft (approx. 3m x 3m). I provided several nesting places consisting of half-open nest boxes and an old fruit bowl. The metal fruit bowl, I fixed securely up in a corner and placed quite a few sticks in the bottom of it and also put in some coconut fibre. Having watched an internet video of these shrikes nesting, I realised that this would probably be my best chance of persuading them to nest.

Several weeks later I noticed that one of the females had become very dominant and was begging one of the males to feed her. When this happened there was great excitement amongst the other members of the group. A week later I noticed that the fruit bowl had been partly lined with coconut fibre and animal hair. I watched the birds' activities on a CCTV camera I had installed and saw that the female was doing most of the building. Following the completion of the nest she sat in it for 10 days but no eggs were laid. I can only put this down to what is sometimes referred to as "nest warming," prior to the eggs being laid. The first egg was laid a few days later. In all, a total of four were laid over consecutive days. They were buff or yellowish, spotted with brown and greys.

The female sat for 16 days. The male took no part other than stand guard over the nest. When the eggs hatched there was great excitement in the group and lots of calling and whistling. I provided tubs of small locusts, crickets, mini-mealworms and waxworms, along with chopped-up pinkie mice and minced (ground) beef. It was amazing to witness all of the members of the group taking food to the nest for the chicks. There was no aggression whatsoever.

All went well until the tenth day, when two of the chicks went missing. I could find no trace of them and can only think that they died and were eaten. The remaining two chicks grew rapidly and continued to be fed by all of the

members of the group. After 19 days in the nest one of the nestlings came to the edge of the nest. It looked like a smaller, duller, brownish, short-tailed version of the adults. I was excited about getting the young shrikes to this stage, but realised that I still had a little way to go. My excitement came to an abrupt end when on checking, I found the second chick dead in the bottom of the nest. The older chick was stronger and was a really dominant bird and I presume that the second chick was unable to compete with it. The remaining chick fledged successfully but continued to be fed by members of the group. It continued to beg for food right up until it was four months old and was well able to look after itself.

The Magpie Shrike is a long-lived species that with careful management can live for 10 years or more. If a dominant bird dies, another member of the group takes its place. This happened with my birds when, while sitting on a second clutch of eggs (there were three eggs in the second clutch), the dominant female died. She had looked really fit and I could think of no reason why she had succumbed. Another female paired up with the male and the nest was relined and a clutch of three eggs was laid, but all three of the eggs were clear.

The birds then began to moult, with the long tail feathers being shed first and I realised that without their long tail feathers they are fairly small birds. They are amongst the most fascinating birds I have kept. It is wonderful to observe their social behaviour. You need to keep them in a group to observe and study this, you would not get the same results keeping only a pair.

I have found that the only drawback to keeping shrikes is the amount of livefood they consume, along with dead chicks and pinkie mice, which can make them quite expensive to feed. I have tried to get them to take softfood, but have had only limited success and have found that it is only taken if it stuck to meat. They sampled fruit and soaked dog biscuits, but after a while seemed to lose interest in these. Any stray mouse that ventures into the aviary is quickly caught and eaten.

As described above, the Magpie Shrike *Corvinella melanoleuca* has been bred by Gary Bralsford. This is possibly the first successful breeding of this species in Great Britain or Ireland. Anyone who knows of a previous breeding is asked to inform the Hon. Secretary.

W. J. C. (WILFRED) FROST: AN INCOMPLETE BIOGRAPHY

by Malcolm Ellis

Having decided to attempt to write some biographical notes about the late W. J. C. (Wilfred) Frost, I found it difficult to know where to begin and very like trying to find the pieces of a jigsaw and then fit them together.

Frost was one of the small band of men who, in the days before air travel became commonplace, sailed to the tropics and returned with collections of exotic birds for patrons such as E. J. Brook, Alfred Ezra, Jean Delacour, John Spedan Lewis, Herbert Whitley (the founder of Paignton Zoo) and London Zoo. He seems to have only ever written two articles, one which was published in the *Avicultural Magazine* in 1910 and the other in 1930. In addition, a letter from him to a member of the society was quoted from in the magazine in 1925 and a long letter from him was published in the magazine in 1936. Otherwise, he seems to have shunned publicity. My old Head Keeper, Don Newson, who began working in the Bird House at London Zoo in 1935, told me that when Frost arrived back at the zoo with his collections, there was always a pile of mail awaiting him, which invariably included requests from newspapers and magazines for interviews, he also remembers him being invited to be on the popular Saturday evening BBC radio programme *In Town Tonight*, but said that Frost always threw such invitations and requests straight into the bin.

I have failed to discover when and where he was born, but judging by the fact that he was said to have been aged 82 in November 1957, he was probably born in 1875. Similarly, I have failed to discover precisely when and where he died, except that it was in the first half of 1958, perhaps in Singapore or Borneo. I have also failed to find a photograph of him. There are no photos of him in the zoo archives or any letters from him, or anything else arising from his long association with London Zoo. Don Newson is convinced that Frost would never have let anyone take a photo of him. It came as a great surprise, therefore, to discover from Don, that when Frost and Ted Tanner (who worked at the zoo from 1908-1956) argued about exactly when Frost had brought back such and such a bird, Frost would consult notebooks and diaries in which he kept meticulous records - and was usually proved right. Unfortunately, it is likely these were lost during the later years of his life or following his death.

To compile these notes I have relied heavily on reports of his collecting expeditions in the pages of the magazine (and may have missed one or two), his two articles and the letters referred to earlier, as well as references by

authors to birds brought back by Frost - or "Mr Frost" - as they often called him. Raymond Sawyer, who bought birds-of-paradise from him, remembers him well, so too does Don Newson, who I have already mentioned, and one or two others who worked at the zoo during that era. It was there that I met him fleetingly in 1957, on what turned out to be his last trip back to England. He was then an old man of 82. He was about 5ft 10in (not quite 1.8m) tall and probably weighed about 11st (154lbs or 70kg), or perhaps a little more, but not much. He wore an old, brown trilby hat, horn-rimmed or tortoiseshell-rimmed glasses and had a nicotine-stained moustache, from constantly smoking cheroots. Like Raymond Sawyer, I remember that his skin was pale and silky, without any hint of a suntan - you would never have suspected that he had spent much of his life in the tropics.

He was a character who everyone seemed genuinely fond of - because he was such a character - yet nobody trusted him. He was, Don says, an "old crook." He recalled how Frost once asked him to swap one of his (Frost's) less than perfect birds for a far better one belonging to the zoo. Don said, that even if he had been inclined to do so (which he was not), he would not have done it for Frost, who he is sure would have "shopped him" if it had suited his purpose.

In *The Birds of Paradise* by Frith & Beehler (1998), Appendix 2 lists collectors of birds-of-paradise - it refers mainly to museum specimens, but also includes some live birds. Frost figures mainly as a collector of museum specimens and through these it is possible to trace a number of the places where he collected and the dates. The most interesting revelation is that in November 1906 he collected specimens on the island of Salawati (one of the islands off the coast of western New Guinea), specimens that are now in the Royal Ontario Museum in Canada. It is the earliest published reference to him that I have been able to find. Whether he went to these places specifically to collect birds for museums, I somehow doubt, I suspect that he was collecting live birds, but if any died, they were skinned and along with any other specimens he may have acquired, were brought back for Lord Walter Rothschild. He is not listed as having collected any bird-of-paradise skins after 1937, the year that Lord Rothschild died. Frost told a fellow keeper in the Bird House at London Zoo, that he used to bring back young cassowaries for Lord Rothschild, which grew up at the zoo and acquired their adult coloration, and eventually ended up in Lord Rothschild's museum at Tring. Lord Rothschild was particularly proud of his cassowaries. In the early 1930s, when he needed a large sum of money, because he was allegedly being blackmailed over an adulterous affair, he offered his collection of bird skins (the largest collection in the world) to the American Museum of Natural History for US\$225,000 (roughly £150,000 at the current exchange

rate), but refused under any circumstances to part with his cassowaries (and other ratites) (Mearns & Mearns, 1998; Beolens et al. 2009).

When Wilfred Frost joined The Avicultural Society in July 1908, his address was listed as 103 Goldhawk Road, Shepherd's Bush, W. (London). The following year he had moved to Ravenscourt Park, which like two of his other later addresses, at Chiswick Park (1913-1920) and Fulham (1920-1929), is also in West London. He had been proposed as a member of the Avicultural Society by Frank 'F. Andrews, whose address was listed as "Zoological Society Gardens, Regent's Park" and, in October 1911 (probably shortly after having returned from Guyana with a collection of birds that was deposited at London Zoo), his address was listed as "c/o Zoological Society," which point to Frost having been associated with London Zoo from early in his career. Don Newson thinks it was Alf 'Timber' Woods, his predecessor as Head Keeper of the Bird House at London Zoo, who told him that Frost had been a scenery shifter in the theatre (perhaps at the Shepherd's Bush Empire!) and as a sideline had trapped British birds, when bird trapping was still legal in the UK. This probably brought him to the attention of some of the men who were later to become his wealthy patrons, men such as Sir William Ingram, founder and owner of the *Illustrated London News*, and Lord Walter Rothschild.

Frost was not living at 103 Goldhawk Road at the time of the 1901 census, but interestingly, living at 105 Goldhawk Road, which was probably the house next-door, was an Edward Frost, aged 39, described as a carpet warehouseman, born in Brighton, Sussex, and his wife Sarah, aged 36, born in Cambridge. They were probably too young to have been his parents, but Edward could have been an older brother or other close relative. Don Newson told me recently how having read in a newspaper that Frost had arrived at London Zoo with another collection of birds, a brother who was in the Navy had got a train from Portsmouth to London and went to the zoo to see Frost, who point-blank refused to see his brother, who had to travel back to Portsmouth without having seen him.

In extracts of a letter from Frost published in the magazine (Crosse, 1925a) disputing an earlier statement about Yellow-backed Lorries *Lorius garrulus flavopalliatu*s associating in large flocks, Frost wrote of having been watching, trapping and caring for lorries for nearly 20 years. So, his first overseas expedition may well have been the one to Salawati in 1906. At the same time as Frost was collecting birds-of-paradise on Salawati (November 1906), Walter Goodfellow was collecting birds-of-paradise on the nearby island of Waigeo (Frith & Beehler, 1998), which leads me to wonder whether this was merely a coincidence or whether perhaps Frost was working under the guidance of Goodfellow, who was already an experienced collector.

We know (Ingram, 1911) that in 1909, Frost took 48 Greater Birds of Paradise *Paradisaea apoda* to the West Indian island of Little Tobago, which Sir William Ingram had bought as a sanctuary for this species when he feared it might become extinct because of the large number of males being killed for their plumes which were being used in the millinery trade. Sir William wrote: "some years ago over 3,000 male full-plumaged birds were imported to Europe every year, but that number has gradually fallen off, until at the present time little more than two or three hundred skins are collected." I had believed that it had been Frost who had been responsible for collecting the birds for Sir William Ingram, but Sir William wrote that to collect the live birds for him he had engaged Mr Stalker "the well-known naturalist, who unfortunately lost his life while employed on the British Dutch New Guinea Expedition" (the British Ornithologists' Union (BOU) Expedition to New Guinea, led by Walter Goodfellow). He added that Mr Stalker received "much valuable assistance from Mr Frost" and that they were able to send home from the Aru Islands over 56 live specimens.

A few of the birds died on the journey and some were retained in England, leaving 48 to be released on Little Tobago. The majority were freed at the end of September 1909. A few of the weaker ones were released later, followed by, according to his son (C. Ingram, 1914), two more in 1910 and a third in 1912, these having been procured from "M. Pauwels, the well-known Belgian aviculturist."

On the voyage to Little Tobago, Frost was assisted by a sailor named Robert Herold, who was later engaged as caretaker to watch over the released birds and sent monthly reports back to Sir William. He reported, for example, that at the beginning of December he had found two males fighting. They had become entangled with each other and he had to separate them, but one died immediately afterwards, the other male's claws having lacerated its bowels. Later he found the carcasses of two males that he thought must have died two or three months earlier, possibly being weaker birds that had succumbed to the "boisterous weather" at that time. A weak male that would not eat died overnight, after having been given a dose of castor oil.

One of Sir William's concerns seems to have been that although nearly all the birds released showed no trace of male plumage, most would eventually turn out to be males. This was based on his experience of having imported into England and kept a large number of birds-of-paradise of different species, many of which when first imported had sombre female plumage, but very few of which eventually proved to be females.

Having at different times described his first caretaker as "a most intelligent Swiss sailor" and "a very intelligent Swiss sailor," Sir William (Ingram, 1917) offered no explanation and expressed no sorrow (at least

when writing in the magazine) over the death of Robert Herold, noting only that having "gave out that he was Swiss," Herold when he was dying had disclosed that he was the runaway son of a Bohemian Professor.

Robert Herold's successor, who objected to a lonely life on the island, took with him for company someone else's wife. The woman's disgruntled husband came after them and murdered her and the man's son, and left the man himself "with very little breath in his body."

In 1917, his third caretaker was an ex-policeman and Sir William reproduced in the magazine extracts from the man's diary. His routine duties seemed to consist mainly of bringing water for the birds, patrolling the island and shooting hawks. May 1st 1917, Jno. H. Hamilton (the caretaker) wrote of having seen several young birds-of-paradise feeding on the berries of the parasol trees which were plentiful on the island. He drew attention to what he said had been a great increase in the number of young birds since he had taken charge 13 months earlier. He continued to give glowing accounts of the increasing number of young but expressed surprise that he had failed to find any nests. He also made much of the number of hawks he had shot, though noting that the birds-of-paradise seemed unconcerned by them. Am I being cynical in suggesting that he was perhaps telling Sir William what he thought he wished to know?

It seems safe to assume that from Little Tobago, Frost travelled to mainland South America, for at the beginning of 1910 he was in Georgetown, the capital of Guyana, enquiring where he might find Cock-of-the-Rock *Rupicola rupicola*?

His account of his quest (Frost, 1910) is notable for its description of the species' nest and eggs, the nest site and, most importantly, his description of the courtship dances performed by several males which gather together at what he called dancing places but which we now call leks. Just over 50 years later it remained the only first-hand description of the courtship display that could be found by C. J. O. Harrison, when he was trying to explain the strange behaviour of the hand-reared male Cock-of-the-Rock living in the Bird House at London Zoo (Harrison, 1961).

Frost revealed little about his method of catching these birds other than that he used his nets in preference to the methods used by the Indians. They used a blow pipe and poisoned arrows to shoot them, then administered an antidote, which in the majority of cases, according to Frost, failed to work; or snared them in fine string nooses that when they were sprung were apt to break or dislocate their limbs.

Some of Frost's freshly captured birds would sulk and no matter what they were offered, would refuse to eat, others would feed on berries and chopped banana as soon as they were caged. One took the end of a cigarette

from between Frost's fingers, when he was holding the bird in one hand and resetting the net with the other. They despised the insectivorous mixture and were indifferent to mealworms and other insects, but would eat any and every berry, ripe or unripe. They also liked papaya (pawpaw), mango, banana and boiled pumpkin. Some grew fond of boiled rice sweetened with condensed milk, especially if it had been coloured with blackberry or blackcurrant jam.

Later in the magazine it was reported (Anon., 1910) that Frost had been collecting in Guyana for Sir William Ingram. The birds he returned with were deposited at London Zoo. These included four adult and two immature male Cock-of-the-Rock which attracted great attention. This species had, however, been exhibited at the zoo before and the "greatest novelty" was a female Blue-backed Manakin *Chiroxiphia pareola*, the first example of this group to have been imported into the UK.

Frost next it seems arrived back in England in May 1913, when he arrived back with what was described (Anon., 1913) as "Major Horsbrugh's Indian Collection"... "a wonderful collection of birds which were principally inhabitants of the Himalayas." Major Horsbrugh (about whom I know little more than what appears here) had travelled to Genoa, Italy, to meet the ship and had brought back some of the more delicate birds by rail. The writer (whose identity I have failed to discover) had joined him at Milan and acted as interpreter and "had the privilege of seeing the collection of 400 birds on board the steamer after she had come alongside the quay." Those who remember Frost will surely be amused to know that when the writer shouted up to him "Any Red-headed Titmice?", his response was to hold up two fingers!

All of the birds were housed on the upper deck under canvas, with one end of the improvised tent open. By the time they got on board it was late and there was no electric light. Through the gloom the first things they saw were three large cages full of sunbirds. One held no fewer than 40 Crimson Sunbirds *Aethopyga siparaja*. There were also Purple-rumped *Nectarinia zeylonica* and Black-throated Sunbirds *A. saturata*. The writer, who "carried off" a splendid Hooded Pitta *Pitta sordida*, thought he or she could remember having seen one some years before at the Crystal Palace Show, and thought that this one brought back by Frost was probably the only one in Europe.

The account included a list of birds that were brought back. A number, including the Velvet-fronted Nuthatch *Sitta frontalis*, were said to have been new to aviculture. Some of the new species he had earlier been said to be returning with (Anon., 1913), such as the Spotted Forktail *Enicurus maculatus* and tiny Chestnut-headed (-crowned) Tesia *Tesia castaneocoronata*, were missing from the list, suggesting that they did not

survive the long sea journey.

In April 1914, he collected a Greater Bird-of-Paradise at Bian River in southern New Guinea and unspecified birds-of-paradise in May 1914, at Golili in the Aru Islands, the former is in the Royal Ontario Museum and the latter are in the Natural History Museum at Tring (Frith & Beehler, 1998). Later that year the First World War broke out and there seems to have been no further mention of him until 1920, when it was reported (Anon., 1920) that for some months past he had been in New Guinea and surrounding islands collecting for London Zoo and in October had arrived there with some 130 mammals and birds. Amongst the latter were 13 King Birds-of-Paradise *Cicinnurus regius*, two Greater, three cassowaries, eight Nicobar Pigeons *Caloenas nicobarica* and various parrots including Rosenberg's Lorikeet *Trichoglossus haematodus rosenbergii*. It was probably the first importation of this subspecies. Maxwell (1940) wrote: "Mr. Frost brought the first living example home in 1910." He must have meant 1920 or it may have been a typographical error, as in 1910 Frost was collecting in Guyana.

August 1921, Frost arrived back at London Zoo with another collection from New Guinea. Under the heading Stray Notes (Anon., 1921), it was reported that there were 14 birds-of-paradise, including Greater, Lesser, Red *P. rubra*, King and Twelve-wired *Seleucidis melanoleuca*. The zoo was said to have been "particularly glad" to have obtained a fine example of the last species. Described as "another very acceptable addition to the collection" were five Aru Island Giant Kingfishers *Dacelo tyro*, this species having apparently never before been imported alive. Three other species that had not been seen before at London Zoo were the Chestnut-bellied Rail *Eulabeornis castaneiventris*, Brown-backed Emerald Dove *Chalcophaps stephani* and Orange-fronted Fruit Dove *Ptilinopus aurantifrons*. A Pesquet's Parrot *Psitttrichas fulgidus* was sent to the USA.

It was four years later that extracts were published of a letter a member, Miss D. G. Crosse, had received from Frost. This was the letter mentioned earlier, that had been prompted in part by a reference in an ornithological periodical to Yellow-backed Lorries associating in large flocks. He was emphatic that "lories never flock" but "invariably travel in pairs, or couples." Many hundreds may assemble in a tree or trees to feed on blossom or fruit, he wrote, but all eventually depart, as they arrived, in pairs. Nearly 20 years of watching, trapping and caring for lorries of every species then introduced to aviculture had, he added, enabled him to form an accurate idea of their "little ways and temperament."

Frost's knowledge of the Yellow-backed Lory was though less than perfect. In his letter to Miss Crosse, when writing about her lory, which was obtained in 1918 and was illustrated in the magazine in 1925, he told her:

“The bird to which you refer (*L. flavopalliatius*) was probably purchased at Ternate, and no doubt originally from Halmaheira” (now spelt Halmahera). Frost continued: “*L. flavopalliatius* and *L. garrulus* occur also on Batchian, and I have even met with a few stray specimens on the north coast of Obi.” Later, he added: “As far as I can gather, the Yellow-backed Lory is as plentiful on Batchian as on Halmaheira, but curiously enough I have never met with a specimen in captivity there.” If he meant he had never met with a Yellow-backed Lory in captivity on Halmahera, that would make sense because, of course, *flavopalliatius* does not occur on the island of Halmahera. It is *L. g. garrulus* (the Chattering Lory) that lives on Halmahera.

Frost seemed to believe that *flavopalliatius* and *garrulus*, which appear to have been treated as separate species, occurred alongside each other on the same islands. This is, of course, not the case, but was perhaps an understandable mistake, as the two must look almost identical when seen flying overhead and feeding high in the trees. It is difficult to know how much of his information was based on first-hand experience and how much relied on what he had been told by others. Miss Crosse (1925b) was somewhat better informed, because she wrote that her Yellow-backed Lory had come from either Batchian (Bacan), Obi, Morotai or Raou (Rau). It could, of course, also have come from Kasiruta or Mandiole, though perhaps not Morotai or Raou (Rau). Birds from these two islands are now regarded as belonging to a third subspecies *L. g. morotaianus*.

Ternate was, Frost told her, merely a more or less dormant volcano, with no resident lory of its own, where at any time scores of Yellow-backed Lories could be purchased from people from Halmahera who, when ships arrived, sailed across the bay to meet them in canoes loaded with White-crested Cockatoos *Cacatua alba*, Great-billed Parrots *Tanygnathus megalorhynchos*, Eclectus *Eclectus rotatus*, Yellow-backed Lories and immense numbers of Violet-necked Lories *Eos squamata*. The conclusion must be that if they were indeed brought across from the nearby island of Halmahera, they were not what we know now as the Yellow-backed Lory, but belonged to the nominate subspecies *L. g. garrulus*. However, nowhere did Frost use the name Chattering Lory, in fact, I suspect, the name did not exist at that time. His reluctance to use an English common name for *garrulus* may have been because, it seems, it was known then as the Ceram Lory, which as he pointed out was a misnomer, because it was (and remains) completely unknown on that island (now spelt Seram). He may have been correct about Ternate having no resident lory of its own, for although Clements (2007) lists *L. g. garrulus* as occurring on Halmahera, Widi and Ternate, there is a suspicion that birds seen nowadays on Ternate are descendents of escaped caged birds.

Frost concluded by telling her that he had two old friends that always accompanied him, a Rajah Lory *Chalcopsitta atra insignis* and a Yellow-streaked Lory *C. scintillatus*. The former was the first of its kind he had ever met with and talked and acted, and was altogether "a wonderful chum."

Referring again to Frith & Beehler (1998), I discovered that in August 1925 he collected birds-of-paradise on the Aru Islands. These are in the Natural History Museum at Tring as is, they record, a Greater Bird-of-Paradise nest (BMNH N. 193.225) collected by Frost at Waboa in the Aru Islands in October 1925. He is listed as having collected a Lesser Bird-of-Paradise at Yapen Island, Geelvink (Cendrawasih) Bay on April 15th 1926 and other birds-of-paradise on Batanta and Salawati Islands during July-November 1926. In May 1927, he collected birds at Wanumbai on the Aru Islands. The latter are in the Royal Ontario Museum, as are the Lesser Bird-of-Paradise and some of the birds collected on Batanta and Salawati Islands, other are in the Natural History Museum at Tring.

Later in 1927, he returned to England after what was said to have been an absence of three years. During that time he had amassed quite a collection. It included 33 birds-of-paradise of six different species, nine Palm Cockatoos *Probosciger aterrimus*, 70 lorries, 40 crowned pigeons, 40 Fairy Bluebirds *Irena puella*, seven Banded Pittas *Pitta guajana*, two cassowaries, 11 egrets "and so on", wrote The Editor, David Seth-Smith, in his Avicultural Notes (1927). There were several birds that were new to aviculture, these included the Rajah Lory, Javan Kingfisher *Halcyon cyanoventris*, Rufous-bellied Kookaburra *D. gaudichaud* and Black-legged Falconet *Microhierax fringillarius*. Rosenberg's Lorikeet had been imported in 1920, so should not have been included with them.

In March 1929, on Kobroor, one of the Aru Islands, about 7ft (approx. 2.1m) above the ground in a hole in a small tree, Frost discovered the nest of a King Bird-of-Paradise. Over 75 years later it appears to remain the only published description of a nest of this species in the wild. No other species of bird-of-paradise had been (or is) known to nest in a hole in a tree (Frith & Beehler, 1998).

The nest contained two eggs. Black and white photographs of one of the eggs accompanied his notes in the magazine on the nesting habits of this species (Frost, 1930). He expressed disappointment not to have got a "snapshot" of the female entering or leaving the nest and of letting her slip through his fingers when he was taking the eggs. He was obviously keen to provide as much proof as possible, following the extreme scepticism which had greeted his earlier suggestion that some birds-of-paradise might be hole-nesters.

Seeking further corroboration, on his "return" to Surabaya (which he

spelt Sourabaia) on the island of Java, he provided a nesting log for the pair “deposited” at the zoo there. (In 1929 and 1930 his address was listed in the magazine as c/o Chartered Bank of India, Sourabaya. The latter was, I think, yet another way of spelling Surabaya, which is a port on the east coast of Java.) It was not until he was “obligated to leave Java again for some months,” that the female evidently nested in the log and when a thorough investigation was made, two dead youngsters badly damaged by ants were discovered inside. Later the female nested in the same log, but in a larger aviary. On that occasion she laid only one egg and never sat on it. By the New Year (1930) he hoped to be in New Guinea again, and with luck collect further data.

In January 1930, he is recorded (Frith & Beehler, 1998) as having collected birds-of-paradise near Oliphantsburg, in the ‘Bird’s Neck’ region of New Guinea, which is immediately north of the Aru Islands. February-March he collected in north-west New Guinea and between February-May he also collected on Batanta and Salawati Islands. The specimens from these expeditions are in the American Museum of Natural History, Natural History Museum at Tring and Royal Ontario Museum.

They give no credence to Frost’s claim (in Rothschild, 1930) that a Trumpet Manucode *Manucodia keraudrenii* egg in the nest of a Greater Bird-of-Paradise was laid by a manucode behaving as an avian brood parasite. Frost was, they suggest, encouraged to believe this by his observation that Trumpet Manucodes often appeared to follow female-plumaged Greater Birds-of-Paradise. We now know, they state, that this latter activity typically has to do with mixed-species foraging and not with nest parasitism.

Later that year, D. S-S. (David Seth-Smith) (1930) reported that “Mr. Frost” had returned recently with several birds-of-paradise of four species, Wilson’s *C. respublica*, Magnificent *C. magnificus*, Lesser and what was almost certainly the species we now call the Western Parotia *P. sefilata*. Perhaps of even more interest were several species probably never before seen alive in the UK, namely the White-crowned Forktail *Enicurus leschenaulti*, Chestnut-capped Thrush *Zoothera interpres*, Black-browed Barbet *Megalaima oorti*, Papuan Frogmouth *Podargus papuensis*, White-naped Pheasant Pigeon *Otidiphaps nobilis aruensis*, Bronze-tailed Peacock-Pheasant *Polyplectron chalcurom*, Yellow-fronted White-eye *Zosterops flavifrons* and Black Butcherbird *Cracticus quoyi*. I suspect that the “Aru Boobook Owl *Spiloglaux aruensis*” may now be *Ninox rufa aruensis*, but have yet to identify the “Rose-breasted Fruit Dove *Ptilinopus rosecollis*.”

Frith & Beehler (1998) record that in July 1931, he collected birds-of-paradise near Sorong, north-west New Guinea and on Halmahera during the same month. The former are in the Natural History Museum at Tring,

as are some of the latter, others are in the Royal Ontario Museum and the Peabody Museum at Yale University.

In the *Avicultural Magazine* (Anon., 1931), it was noted that Frost had returned to London with another fine collection. It included 10 species of bird-of-paradise. He was said to have had "several examples of most of them" and it seems likely that among them were the two Wallace's Standardwing *Semioptera wallacii* "still in moult" and a young Twelve-wired "coming into colour" which Hopkinson (1931) saw at Paignton Zoo and a Wallace's Standardwing, a parotia and an adult King Bird-of-Paradise, that Gurney had at Keswick Hall in December of that year (Martin, 1931). Frost arrived back with three birds, the Ivory-breasted (or Giant) Pitta *P. maxima*, Red-breasted (Macklot's) Pitta *P. erythrogaster* and Yellow-and-green Lorikeet *T. flavoviridis*, that had probably never before been imported. (Wallace's Standardwing had first arrived in Europe with Goodfellow in 1926 and was kept at London Zoo (Hopkinson, 1930).)

According to Sydney Porter (1933), Frost went specially to the island of Halmahera to get the Ivory-breasted (Giant) Pitta and, though several were obtained, only two, he believed, reached England. One was purchased by London Zoo but did not survive for long, even though the bird appeared to be in perfect condition. The white of its breast appeared "glossy and polished like the finest china" and the red of the underparts was like "port wine with a light shining through," wrote Porter.

As well as his notes on rare pittas, he was the author of a series of articles entitled Wanderings in the Far East. One of these brought a long letter from Frost (1936) wanting to correct what he considered were Porter's mistaken or misleading comments concerning conditions in Chinese bird shops in Singapore, the scarcity of lorries on the eastern market, the leg shackling of lorries and parakeets and the trapping of pheasants. There is little point in going over the arguments again here, except to say that Frost thought legs rings were a practical way of keeping lorries and parakeets and had used that method to keep a Rajah, a Yellow-streaked and another lorry. He wrote: "For several years, these three birds accompanied us through Malaya, Sumatra, and Java, Siam, Indo-China, the Moluccas, and New Guinea, eventually reaching England in 1927."

Frith & Beehler (1998) record that during April-May 1934, Frost collected bird-of-paradise skins on Batanta, Waigeo and Salawati Islands. These are in the Natural History Museum at Tring, as are those he collected in north-west New Guinea during the same period.

Reviewing the history of the Philippine Eagle *Pithecophaga jefferyi* (formerly the Monkey-eating Eagle) in zoos. Block (2004) wrote that the second live specimen seen outside the Philippines was "captured in 1934 by

Wilfred J. C. Frost” and sent to Rome Zoo for its reopening as a donation from Jean Delacour. It lived there until 1976 and holds the longevity record for this species in captivity.

The eagle outlived Frost by some 18 years. It is the first indication I have seen that he may have travelled to the Philippines. In the absence of further evidence though, I am inclined to believe that he probably bought the bird elsewhere. It seems that from about 1920 onwards, he regularly sailed to various Indonesian islands (then the Dutch East Indies), travelling as far east as New Guinea and the Aru Islands, and probably bought many of his birds in markets along the way and in Singapore. Don Newson said, Frost talked of having a network of contacts including ships’ captains and crew members, as well various officials, from whom he obtained birds.

The next mention of him I have been able to find was by Sherriff (1937), when writing about a pair of Long-tailed Sibia *Heterophasia picaoides simillima* (called then the Grey Sibia *Sibia simillima*, a bird new to aviculture) that had been imported from Sumatra by “Mr Frost” in the early part of 1936. A painting of the birds by Miss M. Dovaston was the frontispiece in that issue of the magazine.

After a 16 day incubation period the pair hatched two chicks in an aviary belonging to the author, who having successfully bred the Black-headed species *H. capistrata* by allowing the parents their liberty, repeated the experiment with the Sumatran birds, only for the male to disappear on the second night, after which the female failed to rear the young without his assistance.

On November 17th 1937, Frost is listed as having collected bird-of-paradise skins at Sorong, north-west New Guinea. These are in the American Museum of Natural History (Frith & Beehler, 1998). It was the last occasion he is listed as having collected birds-of-paradise skins, which may or may not have been related to the fact that Lord Rothschild had died on August 27th 1937.

Lord Tavistock (1938) referred to a consignment of seven Desmarest’s Fig Parrots *Psittaculirostris desmarestii occidentalis* (which he called Desmarest’s Dwarf Parrots and which the caption to the frontispiece of this species by Roland Green called the Western Golden-headed Dwarf Parrot) “brought over recently” by Frost, who had introduced “a species entirely new to aviculture.” Lord Tavistock seems to have obtained four, which lived almost entirely on fruit - apple, pear, grapes and banana - the latter having been, he believed, the food they were imported on. They drank a little nectar, which he suspected they would have got on perfectly well without and would not look at seed. They did though like removing the bark from green sycamore twigs and were very fond of mealworms and chewed up

iodine nibbles faster than almost any other birds in his collection.

An unnamed author (1938), writing in the magazine about the Short-billed Minivet *Pericrocotus brevirostris*, which was the subject of Roland Green's frontispiece in that issue, wrote of having had a very fine male which had been brought over by "Mr Frost" and which had lived for over a year in one of the author's greenhouses and would probably have lived longer had it not been fed so many mealworms.

On July 2nd 1939, both Frost and Shaw Mayer arrived in London with large collections, having travelled from "the East" on the same boat. Shaw Mayer had been taken ill shortly before reaching London and on arrival had to be taken to hospital. Frost cared for Shaw Mayer's birds as well as his own and, on reaching London, took both collections to the zoo. A short note on the collections appeared in the August issue of the magazine (D.S.-S., 1939), followed later by a more detailed account by Mrs Wharton-Tigar (1939), which is the one I have relied on here.

Mrs Wharton-Tigar (who Raymond Sawyer thinks was South American and whom he recalls very much lived up to the second part of her double-barrelled name) remarked on the fact that Mrs Frost had accompanied her husband on this occasion and that "perhaps may have contributed to the splendid condition of his collection." It included four species of birds-of-paradise, the King, Wilson's, Western Parotia and Lesser. (Shaw Mayer had nine species including Wahne's Parotia *P. wahnesi*, Huon Astrapia *A. rothschildi* and Emperor *P. gulielmi*. His collection also included a Philippine Eagle, only the second ever imported into the UK, which went to Paignton Zoo, Bulwer's Pheasant *L. bulweri* and a "magnificent" Blue-headed Pitta *P. baudii*.) There were also what Mrs Wharton-Tigar described as the "big heavy crested" subspecies of the Victoria Crowned Pigeon *G. victoria beccarii* and "*G. coronata*" (presumably the species known now as the Blue Crowned Pigeon *G. cristata*), a pair of what she called "Molluscan Crimson Wings," Edward's and Mitchell's Lorikeets *T. h. capistrata* and *T. h. mitchellii* respectively, the Dusky Lory *Pseudeos fuscata* and Iris Lorikeet *Psitteuteles iris*, the last named being described as "a first importation." A baby Purple-winged Roller *Coracias temminckii* was another interesting importation. There were also some "lovely" Javan Kingfishers.

Described as "not previously imported" was *Gracula religiosa veneratus*; Frost also had examples of *G. r. intermedia* and the Black-collared Starling *Gracupica nigricollis*, as well as the Grosbeak Starling *Scissirostrum dubium* and several Bali Starlings *Leucopsar rothschildi*. The "King Crows" to which Mrs Wharton-Tigar referred were, as I suspected, not crows but drongos. Frank Woolham helped me identify them as Black Drongos *Dicrurus macrocercus*, a migratory species found on Java and Bali. Frost's

“Javan Cissas” must have been *Cissa t. thalassina*, the nominate form of the Short-tailed Magpie and his “Sumatran Cissas” must have been *C. chinensis minor*, a subspecies of the Green Magpie. Similarly, his “Red Mesias” were probably the Sumatran subspecies of *Leiothrix argenteauris*, the underparts of which are bright red. His “Yellow-headed Fruitsuckers (*Chloropsis icterocephala*)” look to have been what is regarded now as a subspecies of the Blue-winged Leafbird *C. cochinchinensis icterocephala*, also found on Sumatra as well as in southern Malaysia.

He again had Long-tailed Sibias, the bird he had been first to import from Sumatra a few years earlier. There were also scimitar babblers *Pomatorhinus* sp., Fairy Bluebirds and the “loveliest little” Purple-throated (Van Hasselt’s) Sunbird *Nectarinia sperata*. He also had a number of Timor Sparrows *Padda fuscata*, described as “new,” Five-coloured Munias *Lonchura quincolor*, described as “another new importation” and the “dwarf form” of the Zebra Finch *Taeniopygia g. guttata* or *T. castanotis* (Clements, 2007) “from Timor.” There was a Maleo *Macrocephalon maleo* and some Salvadori’s Pheasants *Lophura inornata*, as well as quite a number of the plover-like “Nile Courser or Crocodile bird” (presumably Egyptian Plovers *Pluvianus aegyptius* he had acquired on the voyage home).

A note from P. H. Maxwell (1940), stated that Frost had brought back seven Grosbeak Starlings, of which he had been lucky enough to have obtained two. Later that year, E. H. (1940) added a few random notes on the recent list of birds new to the London Zoo collection. The list, taken from the *Annual Report*, included several birds brought back the previous year by Frost. Top of the list was the Grosbeak Starling, which E. H. (Dr Emilius Hopkinson) thought was new to any collection. The “Timor Zebra Finch,” regarded then as a separate species “*T. insularis*” (and treated again as a separate species called the Chestnut-eared Finch by Clements (2007)), had previously been imported into the Netherlands, while there was a plate of the Five-coloured Munia in Reichenbach’s *Singvogel*, but nothing was said there about it in captivity. Other species new to the zoo collection were the Long-tailed Sibia and the Timor Crimson-winged Parakeet *Aprosmictus jonquillaceus* (presumably Mrs Wharton-Tigar’s “Molluscan Crimson Wings”), which E. H. thought might be the first importation anywhere.

Writing about how after four years of war, visitors to London Zoo could not fail to be impressed by the number and variety of parrots still on view, Prestwich (1943) noted that amongst those living in the flights outside the Parrot House were no fewer than five Timor Crimson-winged Parakeets (presumably brought back by Frost in 1939). (The flights also housed a pair of Spix’s Macaw *Cyanopsitta spixii*.) Writing from the USA, Delacour (1943) mentioned that Frost had brought him “a cock and three hens” of the

very rare Salvadori's Pheasant from Sumatra. These must have perished during the Second World War, Clères having been heavily bombed during the last week of May 1940 and lost entirely by June of that year.

Following the fall of Singapore to Japanese forces in 1942, Frost was interned as a civilian in Changi Camp. Don Newson told me that Frost was put in charge of the rice store and because of his old age - he must have been about 67 when first interned and possibly as old as 70 when released - he was the only man allowed into the women's compound and used to take notes from husbands to their wives and vice versa. The rice store must have attracted lots of rats, which in turn attracted snakes. A report of his death by H.M.S. (Helen May Sidebottom) in *The Daily Telegraph* in 1958, noted that while interned in Changi, he had trapped rats and snakes to help feed his fellow prisoners and had his appendix removed with a "knife and fork"!

Miss Knobel for many years Hon. Secretary and Treasurer of the society, wrote (Knobel, 1943) that members would be glad to learn that after a wait of many months she had on September 10th received a long letter from Shaw Mayer confirming that he was safe and well, serving in the Army "somewhere in Australia." He confirmed that Frost was interned in Changi Camp and wrote that he had heard recently from Mrs Frost, who was with her son Michael in Western Australia.

Don Newson believes that Michael was about 12 years of age when he was taken to Australia. He remembers how after the war Frost frequently cut-out newspaper reports about bad weather in England, recalling particularly one showing part of the zoo flooded after a downpour one Bank Holiday, and sent these to his wife to discourage her from wanting to return to England.

There was an older son, who had lost an arm, who Don believes was from an earlier marriage and had been a photographer with an Army unit in Egypt during the war, who after the war worked for the BBC or some similar organisation. Towards the end, when Frost was no longer so welcome at the zoo, in the evenings he used to go back to this son's home in West London.

It seems that when Frost returned to England in 1939, he sent the British Museum a large collection of mammal specimens from what were then the Dutch East Indies. When he returned to England after the war, he found a few more specimens that he had failed to send in 1939. These included a fruit bat that he had collected at Tamalanti, western Sulawesi (Celebes) in 1938 or 1939, which was subsequently named the Small-toothed Fruit Bat *Neopteryx frosti* by Hayman in 1946. It remained the only known specimen until 1985, when three others were collected (Watkins pers.comm.). So far as I am aware, it is the only animal named after Frost.

Listing additions to the London Zoo collection, Prestwich (A. A. P.,

1947) wrote that in the month of September the most important new arrival had been a Javan Pond Heron *Ardeola speciosa*, a species new to the collection, brought home by Frost. In the first magazine of 1948, he was listed as having rejoined the society and his address was again given as "c/o Zoological Gardens, Regent's Park, London N.W.8." Later that year, under the heading Personalia (1948), it was reported that W. J. C. Frost the "indefatigable collector," who had returned recently from Singapore with a collection of birds and other creatures, had left for New Guinea in search of birds-of-paradise and did not expect to return to England until the following summer.

Towards the end of the following year, again under the heading Personalia, A. A. P. (1949) wrote that Frost had returned from New Guinea with a good collection of birds. Included were 13 male birds-of-paradise, 10 Greater and three King birds, along with 12 crowned pigeons, "four Pleasing Lories and six Gold-crowned Bulbuls, etc." The Pleasing Lories were what we now call Red-flanked Lorikeets *Charmosyna placensis*, I learned from Rosemary Low. The bulbuls were, I presume, the species now called the Straw-headed Bulbul *Pycnonotus zelanicus*, a non-New Guinea species he must have picked up along the way.

November 9th 1949, His Grace the Duke of Bedford, Lady Spencer-Jones, wife of the Astronomer Royal, pianist and actress Yvonne Arnaud and Frost, were among the guests at the British Aviculturists' Club dinner in London, after which Gerald Iles showed films of animals at Belle Vue Zoo, Manchester, Vincennes Zoological Park in Paris and the zoos at Zürich and Basle.

Eddie Orbell, who in the late 1940s and early 1950s worked in the zoo's quarantine station, a former indoor riding school in nearby Park Village East, remembers Frost's nicotine-stained moustache and how he used to store a lot of his "kit," including spears and bows and arrows which he brought back to sell, up on the balcony of the quarantine station. The late Joe McCorry remembered Frost having a fold-up wooden camp bed covered with an old, tiger skin, on which he slept in one of the dens of the Sanatorium (the old animal hospital behind the Bird House). When the keepers in the Bird House took their morning and afternoon tea breaks, he would come across and join them for a cup of tea. Joe, who insisted that Frost was called William or Bill, wrote (pers. comm.) that he did not confide in many people at the zoo, but if he did talk to you, he had lots of stories to tell. Unfortunately, those that Joe told me, are unsuitable to repeat here.

Don Newson said that Frost did not have much time for "chiefs and bigwigs" and much preferred to have a "wet of tea" and "swop yarns" with the lads (the keepers). Frost was, he said, careful with his money and did not

give much away. The only thing he ever gave Don was a can of Australian Red Cardinal beef dripping, which Don still clearly remembers. He also recalls how, when Peter Rice, who was working at the zoo and had helped Frost, told him he was getting married, with uncharacteristic generosity, Frost gave him £5 (approx. US\$8 at the current exchange rate), which was probably the equivalent of about two weeks' wages in those days. Frost had, said Don, a special arrangement with the manager of Barclays Bank at nearby Camden Town, allowing him to take his money down to the bank in biscuit tins. Afterwards, Don said, he would go around the corner to Inverness Street, which was (and still is) lined with market stalls selling cheap "fruit and veg" and would collect the bruised and discarded fruit to take back to the zoo to feed his birds. Don remembers how, after the war, Frost complained that people out in the Far East were no longer willing to work for a "handful of beads," but wanted the "full union rate of pay" for making the travelling boxes and crates for his birds.

There appears to be no record of him having brought back a collection in either 1950 or 1951. Perhaps to make up for that, he brought back two collections in 1952. He was listed as having been amongst the guests at the British Aviculturists' Club meeting in London on March 12th 1952 (Prestwich, 1952) and in the March-April issue of the magazine, in his London Zoo Notes, John Yealland (1952a) wrote: "As to be expected, the arrival of Mr. Frost with a collection of Indo-Malaysian birds resulted in the addition of some attractive specimens to the Society's collection." These included a Sri Lanka Mynah *G. ptilogenys*, a species new to the collection, a pair of Blue-winged Leafbirds *C. c. nigricollis*, a subspecies new to the collection, plus two Fairy Bluebirds *I. p. turcosa*, a Greater Bird-of-Paradise, a Timor Crimson-winged Parakeet and a Green Junglefowl *Gallus varius*.

In the May-June issue, P. H. Maxwell (1952a) wrote of having recently acquired a young Rosenberg's Lorikeet from Frost. In News & Views in the September-October issue that year, it was reported that Frost had returned recently from his "49th" collecting expedition with 26 birds-of-paradise, comprising Greater, Red, Twelve-wired, Wilson's and King. There were four species of hornbill, the Great *Buceros bicornis*, Rhinoceros *B. rhinoceros*, Wrinkled *Aceros corrugatus* and Plicated *A. plicatus*, as well as Nias (Island) Mynahs *G. robusta* and what we now call Purple Swampheens *Porphyrio porphyrio*, plus single specimens of the Southern Cassowary *Casuaris casuaris*, Pesquet's Parrot, Black Lory *C. atra*, Long-tailed Parakeet *Psittacula longicauda*, Pink-headed Fruit Dove *P. porphyreus* and Red-breasted (Macklot's) Pitta. (A. A. P., 1952)

One of the Nias (Island) Mynahs was presented to the zoo by Frost (Yealland, 1952b). It was a species that had not previously been represented

in the London Zoo collection. It may have been the bird with only one eye, that was living in the Bird House when I began working there in January 1956. I remember it being almost the size of a small crow and having an enormous gape and an ear-splitting screech. It would incline its head to one side and with its long wattles hanging down, would chatter away in what must have been an Indonesian dialect.

Writing about his new Pesquet's Parrot living in the Parrot House at Whipsnade Zoo, Maxwell (1952b) noted that the bird was collected by Shaw Mayer and brought to England with the rest of his collection by Frost in July that year. Shaw Mayer had for some reason been unable to accompany what must have been his last collection to reach England. The following year he took charge of Sir Edward Hallstrom's aviaries at Nondugl in the Wahgi Valley of Papua New Guinea.

There appears to be no record of which of the birds on the above list were Frost's and which were Shaw Mayer's, but Shaw Mayer's involvement helps explain how Frost managed to bring over a second collection - and a sizeable one at that - so soon after his "Indo-Malaysian" collection. It may have been the occasion that he arrived back with several Wilson's Birds-of-Paradise. Raymond Sawyer cannot remember the exact number, but thinks that Frost had more than 10 of these.

In the 1950s, Raymond was enjoying great success with his birds on the show bench, where they regularly took the top awards at "the National" and other leading bird shows. Determined to beat him, his main rival, a scrap metal dealer from "the Midlands," arranged to buy all of the Wilson's Birds-of-Paradise from Frost. However, living in London, Raymond usually got first pick of Frost's best birds and Frost agreed to sell him one of the male Wilson's Birds-of-Paradise so long as he did not tell his rival that he had got it from him. Raymond was amused by this because, as he said, it would be obvious that he had got it from Frost. Despite Raymond's rival having bought all the other birds, however, it was Raymond's bird that won the class for birds-of-paradise and bowerbirds at that year's National Show.

Writing about the show, presumably held in December 1952, E. N. T. Vane (1953) noted that on show were no fewer than four Wilson's Birds-of-Paradise, as well as a pair of Twelve-wired. Raymond was disappointed not to have got the Red-breasted (Macklot's) Pitta brought back by Frost, which went to Viscount Chaplin (who at the time was Hon. Secretary of the Zoological Society of London and in 1935 edited the *Avicultural Magazine*) who, Raymond said, did not have the £10 (approx. US\$16) to pay for it and, eventually, tired of the bird and gave it to the zoo.

Raymond remembers how, on another occasion, when paying Frost for some birds, his rival overpaid him by £20 (approx. US\$32). It was a lot of

money in those days and Frost pocketed it without saying a word. However, Raymond's rival was Frost's equal and, when Frost returned from the Far East with his next collection and, he again bought some birds from him, he underpaid Frost by £20 (approx. US\$32) and, again, Frost pocketed the money without saying a word.

In early June 1953 Frost returned to the UK with yet another collection. A. A. P. (1953) reported that it consisted mainly of birds he had purchased from local people in the Far East, where bad weather had prevented him from using his "usual trapping methods." This made me smile, as several times Don Newson has told me: "Of course, Frost never trapped his own birds, he used to tell us that he had a string of contacts who he got his birds from." This is hardly surprising, however, as in 1953 he must have been about 78 years old and must have long ago stopped shinning up trees to set nets.

The list of birds included five cassowaries, eight crowned pigeons (probably *G. cristata*), 16 Pied Imperial Pigeons *Ducula bicolor*, three Plicated or Blyth's Hornbills, a Ceylon Grey Hornbill *Ocyeros* (formerly *Tockus*) *gingalensis*, two Nias (Island) Mynahs, two "Sunda Island Mynahs" (*G. r. venerata*), two Bali Starlings, a Green-billed Malkoha *Phaenicophaeus tristis longicaudatus*, what was listed as a "Large-billed Blue-winged Pitta" (possibly the Mangrove species *P. megarhyncha* rather than the smaller billed *P. moluccensis*) and five "Golden-crowned Bulbuls" (again probably the Straw-headed species). Also on the list were six Purple-naped Lories *L. domicella*, four Black-capped Lories *L. lory*, four Black Lories, four "Ceram Lories" (this seemed to be the common name of *L. garrulus* but was, as Frost pointed out, a misnomer, because it does not occur on the island of Ceram, now spelt Seram), two Red Lories *E. bornea*, two Black-winged Lories *E. cyanogenia*, three Violet-necked Lories, five Forsten's Lorikeets *T. h. forsteni*, five Ornate Lorikeets *T. ornatus*, four Plum-headed Parakeets *P. cyanocephala*, two Emerald-collared or Layard's Parakeets *P. calthorpeae* and a Moustached Parakeet *P. alexandri*.

In his London Zoo Notes in the first issue of the magazine the following year, Yealland (1954) wrote that four Ornate Lorikeets, five Forsten's Lorikeets, a Black Lory, three Black-capped Lories, three Purple-naped Lories, a Chattering Lory and three Yellow-backed Lories (probably the "Ceram Lories" on the above list) had been deposited at the zoo, together with four Crowned Pigeons *G. cristata*, 10 Pied Imperial Pigeons, a Javan Mynah (probably *G. r. religiosa*) and three "Yellow-crowned Bulbuls *Trachycomus ochrocephalus*." The suspicion must be that these were the unsold remnants of the above collection. It is difficult to understand why so many of the lories and lorikeets remained unsold, unless it was due to restrictions leading up to the ban on the importation of parrots, which was

imposed on November 1st 1953. It was relaxed a little later but not fully revoked until 1966.

Describing the first breeding in the UK of the Purple-naped Lory in 1954, Tom Spence (1955) wrote that his pair was imported for him "under license by Mr Frost" and along with three others appeared to be the only specimens of this species brought to the UK for many years.

Frost was amongst the guests at the 43rd meeting of the British Aviculturists' Club in South Kensington on September 8th 1954, at which Walter Higham showed his film of birds of the Scottish Highlands (Prestwich, 1954). This points to the fact that Frost had probably arrived back with his latest collection in August or the first week of September, but for some reason it was not until the November-December issue that the list of birds was published in the magazine. It reveals that he returned with a "Westermann's Cassowary" (which if I understand correctly has a white occipital patch on the head and comes from the Vogelkop region (also known as the Bird's Head or Cendrawasih Peninsula) of New Guinea and should, some believe, be assigned the scientific name *C. bennetti westermanni*), a Northern (One-wattled) Cassowary *C. unappendiculatus*, a Palm Cockatoo, a Salawati King Parrot *Alisterus amboinensis dorsalis*, a Narcissus Flycatcher *Ficedula narcissina*, five "Black-chinned Laughingthrushes" (probably the Black-throated *Garrulax chinensis*), 15 Painted Quail *Coturnix chinensis*, a Plicated Hornbill, three Nicobar Pigeons and 20 birds-of-paradise - Lesser, Twelve-wired, King, Hunstein's Magnificent *C. magnificus hunsteini* and Wilson's (A. A. P., 1954).

By the time the list was published, Frost had already set off on another expedition. On November 9th the following year, he attended the 49th meeting of the British Aviculturists' Club in South Kensington, at which Iris Darnton showed a film of her and her husband's two-month safari to Uganda the previous year (Prestwich, 1955), so I am assuming that he had probably returned to England with another collection towards the end of August or in September. I have, however, been unable to trace any details of such a collection.

I think it was probably at the end of 1955 or early in 1956 that Tommy Sangster, a keeper in the Lion House at London Zoo, took some Père David's Deer *Elaphurus davidianus* from Whipsnade Zoo to China and during a stop at Singapore visited Frost. He was, I think, shocked by the conditions in which he found him living. He went to the address he had been given, only to discover that Frost was living in what was described as, "a shed at the end of someone's garden" in the poorest part of Singapore. Whereas Raymond Sawyer recalled (pers. comm.) that when Jean Delacour visited Fred Shaw Mayer in the highlands of New Guinea, Shaw Mayer got out his best bone

china, Frost offered Tommy Sangster tea in an old tin can or mug and seeing his reluctance to drink it - because there were so many insects floating on the top - took it from him and with a stick, flicked them off and handed it back to him. I would love to have asked Tommy Sangster about the occasion he visited Frost, but to my great regret, by the time I got his phone number and called it, it was no longer in use and I subsequently discovered that he had died a few months earlier.

When I began working in the Bird House in January 1956, keepers often talked about (and laughed about) an incident when a man named Jack Indge, who was both an aviculturist (he was awarded the society's medal for breeding the Red-sided Eclectus *E. r. polychloros*) and a dealer at the time, came to see Frost's latest collection. Apparently, he was peering into the various boxes and suddenly stopped, turned around and said, "Ah, Rothschild's Grackles eh, Frost, how much?" A deal was quickly concluded and he triumphantly carried off the box of birds, no doubt convinced that he had got one over on his rivals. It was not until a few days later that he discovered that they were not the much sought after Rothschild's Grackles (i.e. Bali Starlings that were far rarer in aviculture in those days and consequently commanded a high price), but the then still common Black-winged species *Sturnus melanopterus*, for which there was little or no demand. He immediately returned to the zoo with them and demanded his money back. Frost took great satisfaction in pointing out that it was him (Indge), who had said they were Rothschild's Grackles (Bali Starlings) and, he had therefore not misled him, and had no intention of giving him his money back.

He did not come to England in 1956, but returned the following summer. In *News & Views* A. A. P. (1957) reported that on the last day of August, Frost had arrived back on the P&O vessel *Shillong* with the results of his "53rd" collecting expedition. The list of birds included Greater and King Birds-of-Paradise, Great, Wreathed *A. undulatus*, Plicated and "Malayan Pied Hornbills" (the last named presumably *Anthracoceros albirostris convexus*), New Guinea Bronzewings *Henicophaps albifrons schlegeli* (see later), Nicobar and Partridge Pigeons (*Geophaps smithii*, presumably, from the northernmost part of Australia), bleeding-hearts *Gallicolumba* sp., Bronze-tailed Peacock-Pheasants and Bornean Crested Firebacks *L. ignita*. Other birds on the list included Banded Pittas, Blue-winged Pittas *P. moluccensis*, Fairy Bluebirds, Bali and Black-necked Starlings, Fire-tufted Barbets *Psilopogon pyrolophus*, rosefinches *Carpodacus* sp. and Mitchell's Lorikeets.

Frost's collection was housed behind the Mappin Terraces, in a building which until recently had been the Chimps' Nursery. On the left-hand side

as you went in, there were three (or possibly four) white-tiled chimp cages behind glass screens (like those in the Monkey House). Frost's collection, still in its travelling crates, was stacked in one of the cages. I can remember four male Greater Birds-of-Paradise, their plumes stained red by the wood shavings on the floor of their cages, some Fire-tufted Barbets, Blue-winged Pittas, possibly one or two hornbills and, I think, a Binturong *Arctictis binturong*. (Raymond Sawyer remembers buying Binturong and Mouse Deer (or Lesser Malayan Chevrotain) *Tragulus javanicus* from Frost when he (Raymond) was in charge of the LCC (London County Council) Parks Department zoos at Crystal Palace and Battersea Park.) Raymond and Don Newson have both commented on the fact that when Frost was feeding and watering his birds, probably because of failing eyesight, he put a finger into the water pots to check that there was enough water in them.

As an inexperienced 17 year old keeper, I was instructed that should he come to the Bird House when I was there alone, I should not let him help himself to mealworms, I should keep the fruit cupboard locked and should make sure that he did not creep along the passage and help himself to seed - such was his reputation. I was led to believe that if I turned my back on him for more than a few seconds, he would almost certainly empty the mealworm bin and clear out the fruit cupboard.

Sure enough, the first Sunday afternoon I was left on my own for an hour or so, the smell of a cheroot came drifting along the passage and a few moments later Frost appeared. He was wearing an old, brown trilby hat, horn-rimmed or tortoiseshell-rimmed glasses, a white or creamy-white shirt, a tie and, I think, a waistcoat, with perhaps a watch or pocket watch, a green tweed jacket, grey flannel trousers badly stained with fruit juice or something more unpleasant, and brown shoes and was, of course, smoking a cheroot. He did not introduce himself or anything like that, he simply handed me a tin, I think it was an old cocoa tin, and said, "put some mealworms in this." Mindful of what I had been told, I carefully rationed out some mealworms and handed the tin back to him. He took one look in the tin and handed it back to me and said, "you will need to put in a lot more than that otherwise they will get in the corners and sweat."

Writing about the birds at Darenth-Hulme (her and Arthur Prestwich's home at Oakwood, North London), Bonner (1957) wrote that the most important recent arrivals were four "Black Bronze-winged or White-capped Ground Pigeons" brought from the Aru Islands by Frost. This species is known now as the New Guinea Bronzewing.

In mid-November 1957, Frost, aged 82, and with failing eyesight, left London for Borneo on yet another expedition. I am surprised that it did not strike me as in any way extraordinary at the time. It is only now that

I am considerably older, that I realise how extraordinary it really was that at the age of 82, Frost was setting off back to the rainforests of Borneo. It was, or would have been, his "54th" such expedition, though it is difficult to work out how he, or perhaps Prestwich (A. A. P.), arrived at that figure. Either he began well before 1906, or, more likely, it included a number of mini-expeditions perhaps from Singapore or Java to other parts of the region; for example, I found a reference in the magazine to him taking a collection of crowned pigeons and other birds to the zoo in Colombo, Sri Lanka, but failed to note it down and have failed to find it again.

In January 1958, Frost continued to be listed as a Hon. Life Member of The Avicultural Society, but by the September-October issue of the magazine, when writing in *News & Views*, A. A. P. (1958) referred to the "late W. J. C. Frost." I cannot recall how news of his death first reached us in the Bird House at London Zoo, but remember that there was a brief report of his death in *The Daily Telegraph*, which was cut-out and saved, but not even that, so far as I can recall, stated when and where he died. Nobody ever mentioned whether or not his wife and son Michael returned to the UK after the war, or whether he ever went to Australia to visit them.

In *News & Views* the following year, A. A. P. (1959) referred to a lorikeet brought back by Frost on his last expedition. The lorikeet which went to Wassenaar had it seemed been bought by Frost at a small port on the west coast of what was then Portuguese Timor. It was quite new to him and it seems it remained unidentified until 1959, when E. N. T. Vane identified it as *Trichoglossus haematodus flavotectus*, confined to the islands of Wetar and Roma, just to the north of Timor. Apparently there was no reference to any previous importation of this subspecies, no illustrations, and no skins of it in the British Museum (Natural History) or the museum at Leiden in the Netherlands. A. A. P. wrote that it is somewhat similar to Weber's *T. h. weberi*, though larger in size. Forshaw and Cooper (1973) described it as similar to Edward's *T. h. capistratus*.

Of Frost's contemporaries, Walter Goodfellow died in 1953, C. S. Webb died aged 66 on April 10th 1964 at his home in Nairobi, Kenya and Fred Shaw Mayer died on September 1st 1989 in his native Australia, 25 days short of his 90th birthday. Charles Cordier died in September 1994 in Switzerland. He was aged 97 and had sent his final collection from Bolivia in 1983.

I have never heard anyone say a bad word about Cecil Webb. Don Newson said that if he had a fault, it was that he was too nice - he was a gentleman. Webb and Shaw Mayer were, he said, far more discerning than Frost and brought back only the choicest birds and, by all accounts, always landed them in perfect condition without a feather out of place. Cliff and Dawn Frith told me that Shaw Mayer's bird-of-paradise skins they have

examined in museums are beautifully prepared and have a lot of important details (more than you usually find) recorded in his own handwriting on the labels.

Author's note

I have in most cases used current common and scientific names in place of the older names used in many of the older published accounts. I have also in most, though not in all instances, used the modern names of the countries in which Frost collected.

Acknowledgements

I have relied heavily on reports of Frost's collecting expeditions by D. S-S. (David Seth-Smith), A. A. P. (Arthur Prestwich), Mrs Wharton-Tigar and a number of other authors, some of whom I have failed to identify. Without these and Frost's two articles, the letter quoted by Miss Crosse and Frost's letter to the magazine, along with the more recent annotated list of collectors of birds-of-paradise in Appendix 2 of *The Birds of Paradise* by Frith and Beehler (1998), the above biography (albeit incomplete) would have been impossible to compile and there would have been virtually no record of Frost's long career. I am also grateful to Don Newson, Raymond Sawyer, Eddie Orbell, Joe McCorry and others for sharing with me their memories of Wilfred Frost; to Fred Barnicoat, Paul Boulden and Stewart Pyper for providing me with copies of articles, letters and reports of Frost's collections in back issues of the magazine that I do not have easy access to; to Michael Watkins for the information on the Small-toothed Fruit Bat; Rosemary Low and Frank Woolham for help identifying birds; and Russell Tofts for providing a reference I had failed to retain.

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* * *

VISIT TO GERMANY 2011

The Avicultural Society is planning a visit to Germany over the weekend of September 9th-September 12th 2011. Members will have the opportunity to visit Wuppertal Zoo, Ludger Bremehr's collection and Koln Zoo. Further details are available from: Karli Lisiecki, Howard Travel, 12/13 Church Walk, Trowbridge, Wiltshire BA14 8DX. Tel:01225 777227/E-mail: karli@howardtravel.com

* * *

PEKIN ROBIN GROUP

We have set-up a Special Interest Group for those who keep and breed Pekin Robins *Leiothrix lutea*. It is being coordinated by Chris Dunn, whose article about keeping and breeding Pekin Robins will be published in the next issue of the magazine. If you are interested in participating in this group, perhaps to exchange birds or find a mate for an unpaired bird, you can contact Chris by E-mail:chrisdunn1987@hotmail.co.uk/Tel:07413 522485. The full list of Special Interest Groups and their coordinators can be viewed on our Website:<http://www.avisoc.co.uk>

AN INTERESTING AND UNUSUAL HYBRID

by Fred Barnicoat

In 2008, a strange young bird unexpectedly appeared in Peter Brummage's garden aviary in Benoni here in South Africa. It proved to be the offspring of an odd male Jacarini Finch or Blue-black Grassquit *Volatinia jacarina* and a single female Cuban Finch or Cuban Grassquit *Tiaris canora*. It clearly shows features of both its parents, being a small finch predominately of varying shades of black, with an olive-green back. The face is jet black, surrounded by the typical crescentic neck-frill of the Cuban Finch, which is dark grey instead of yellow. Its black chest fades into grey on the lower belly. A few yellow spots on the side of the head somewhat detract from the harmony of its appearance. The tail is noticeably longer and broader than that of its Cuban Finch mother and its dull black beak is midway between the short conical beak of the Cuban Finch and more elongated beak of the Jacarini Finch. This hybrid is almost certainly a male and has an exceptionally loud and penetrating call, more so than either of its parents. Like its paternal parent it keeps low down and hidden among the aviary vegetation. I am not aware of any previous record of a hybrid of the Jacarini Finch and the Cuban Finch only with the congeneric Black-faced Grassquit *T. bicolor*. This hybrid underlines the affinity of the genus *Volatinia* and the genus *Tiaris*.

* * *

FORESTS OF HOPE

BirdLife International is urgently appealing for funds to support its work in the forests of Western Siem Pang, Cambodia, one of the last remnants of the ecosystem that once covered large areas of central Indochina. The forests are extensive and BirdLife International has identified a key site covering over 150,000 hectares (approx. 375,000 acres), with 90% of the habitat still intact and five Critically Endangered species of bird, the White-shouldered Ibis *Pseudibis davisoni*, Giant Ibis *Thaumatibis gigantea*, White-rumped Vulture *Gyps bengalensis*, Slender-billed Vulture *G. tenuirostris* and Red-headed Vulture *Sarcogyps calvus*. This Important Bird Area (IBA) was threatened by plans to log the forest and convert it into a biofuel plantation, but BirdLife International has succeeded in having the logging license revoked and hopes to conserve the forest and manage it under a new agreement with the government of Cambodia.

BOOK REVIEWS

PARROTS OF THE WORLD

A field guide dedicated to a group of birds is an unusual concept. Field guides tend to cover a specific area whereas parrots, of course, are found throughout the tropics and beyond. *Parrots of the World* in the excellent Helm Field Guide series will be welcomed by birdwatchers and bird keepers alike.

This is the third book with this title by Joseph Forshaw, the renowned authority, and the second illustrated by Frank Knight. The previous collaboration, published in 2006, was sub-titled *An Identification Guide* and was much too large to handle in the field. The layout of the two books is similar (with a colour plate on the right and the brief text and map on the left) but, in this recent publication, the text is limited to the facing page with the addition of 15 introductory pages.

So how else does this book differ from the 2006 volume apart from being a paperback and having a different publisher? The colour plates are virtually identical, but there is the addition of common names and a slight rearrangement of some images to allow for the smaller page size. There are also a few alterations to species' order - e.g., hanging parrots now come before pygmy parrots.

For those who do not have the earlier volume, this will be an extremely useful and informative book and its smaller size and lighter weight makes it easier to handle. Frank Knight's plates have an amazing clarity but here the illustrations are reproduced a fraction darker than the originals. New subspecies have been added, such as the *tucumana* race of the Mitred Conure, with the former subspecies *alticola* elevated to full species and the very closely related Hocking's Conure described for the first time. In other words, this book reflects all the latest taxonomic changes.

Parrots of the World by Joseph Forshaw ISBN 978-1-4081-3034-6, Helm Field Guides, 336 pages, numerous illustrations, is published by Christopher Helm Publishers Ltd. Price £24.99.

Rosemary Low

LIVING WITH PARROTS

I had only reached page 10 of *Living with Parrots of Different Sizes* when I found myself congratulating the authors out loud! When they decided to buy two Amazons as pets, they weighed up the pros and cons of parent-reared and hand-reared young. They decided on parent-reared. The Red-lored Amazons were six months of age and straight out of their parents' aviary,

yet after six and ten days they were taking seed from the authors' fingers and after 16 days the male was sitting on the hand. They proved to be easy to train and to handle.

The Swedish authors, Birgitta Magnusson and Peter Tössberg, had for some years kept Budgerigars and Cockatiels before deciding to keep larger parrots. The book describes in a most appealing way their experiences with their birds. It is also full of practical information. Advice is given on important decisions that many parrot owners must make. They debated whether to take on a captive-bred, 11 years old Blue-fronted Amazon named Morty whose owner was on the point of having him euthanised due to his aggressive behaviour. They decided to give him a chance although several previous attempts to rehome him had failed. Morty proved to be unpredictable and attacked and bit "quicker than a cobra". Despite some serious injuries they persevered and - suddenly - Morty fell in love with Birgitta and became totally devoted to her.

I like this book a lot because it describes problems that many parrot owners face, and how they were successfully overcome. Some of their observations, with which I totally agree, are rarely published elsewhere. For example, the authors felt it was important to show a Cockatiel her dead mate, so that she could understand he had gone. Otherwise she might scream for a long time, not knowing where he was. The authors ask: "How many veterinarians are aware of this?"

The section on Budgerigars as pets is outstanding. Their huge popularity of the 1950s and 1960s declined when larger parrots became available. Like the authors, I have always maintained that they are perfect pets, being intelligent, charming and easy to manage. It was interesting to read that under Swedish law, Budgerigars must live with at least one of their parents for the first six weeks of their lives, to ensure that they are fed properly.

The photographs by Peter Tössberg (one or more to a page) are superb. He took an incredible 40,000 shots to achieve the desired results. Those of the Blue-fronted Amazon in flight show the full beauty of this species. All their birds are in such perfect feather condition that the photos alone are worth the price of the book. Cockatiel and Budgerigar owners will enjoy the enchanting photos of chicks at different stages of their development and of adults in flight.

I would describe this as a book of extremely useful and very readable reminiscences, and can recommend it unreservedly.

Living with Parrots of Different Sizes by Birgitta Magnusson and Peter Tössberg ISBN 9789197847322, published by Tossmet, hardback, 144 pages, 290 photographs, is available price £23.50 via the following website: www.bokus.com/bok/9789197847322/living-with-parrots-of-different-sizes/

Rosemary Low

NEWS & VIEWS

CHRISTMAS COCKS-OF-THE-ROCK

Each year I look forward to receiving a Christmas card from Josef and Natalie Lindholm with the latest news from the Dallas World Aquarium in Texas. In this year's card, Josef wrote to say that if the Andean Cock-of-the-Rock *Rupicola peruvianus* eggs due to hatch on Christmas Day did so successfully, the chicks would be the 28th and 29th hatched there since 2007. Two other breeding females were thought to be about to lay.

Dallas World Aquarium again had a very successful year with araçaris, with multiple clutches of Curl-crested *Pteroglossus beauharnaesii*, Ivory-billed *P. azara* and Green Araçaris *P. viridis*. A subspecies which Josef calls Humboldt's Letter-billed Araçari *P. inscriptus humboldti* hatched young for the first time at the Dallas World Aquarium.

Quite a number of new species were added to the collection during the year, these included Flame-faced Tanager *Tangara parzudakii*, Saffron-crowned Tanager *T. xanthocephala* and Beryl-spangled Tanager *T. nigroviridis*, Montezuma or Mearn's Quail *Cyrtonyx montezumae* and a pair of Bronze-winged Pionus *Pionus chalcopterus*.

* * *

A MIXED BAG

In the 2010 breeding season Bernard Sayers bred: one Chaco Owl *Strix chacoensis*, three Burrowing Owls *Athene cunicularia*, seven Boobook Owls *Ninox boobook*, two White-faced Owls *Ptilopsis leucotis*, three Indian Scops Owls *Otus bakkamoena*, three Tropical Screech Owls *Megascops choliba*, two Black-winged Lories *Eos cyanogenia*, five Black-cheeked Lovebirds *Agapornis nigrigenis*, two Grey Peacock-Pheasants *Polyplectrom bicalcaratum*, 10 Triangular-spotted or Speckled Pigeons *Columba guinea*, three Lemon Doves *Aplopelia larvata*, one Emerald Dove *Chalcophaps indica* and about 20 Java Sparrows *Padda oryzivora* of the grey wild-type. By Bernard's high standards it was not, he wrote, "a brilliant breeding season," but there were "just enough babies" to keep him "amused."

* * *

NEW DIRECTOR GENERAL

Dr Mark Pilgrim, who joined Chester Zoo as a bird keeper in 1988 and is European Studbook holder for the Equadorian Amazon *Amazona autumnalis lilacina*, became the zoo's new Director General on October 1st 2010, taking over from Prof. Gordon McGregor Reid, who stepped down after 18 years at the zoo.

AN EARLIER UNSUCCESSFUL ATTEMPT

Chester Zoo which currently has five Red Birds-of-Paradise *Paradisaea rubra*, two males and three females, succeeded in breeding the Red Bird-of-Paradise for the first time in the UK in 2003, when two chicks fledged in its Islands in Danger exhibit (see Vol.110, No.1, pp.20-27 (2004)). At the time, I was unaware (as I suspect most other members were) that there had been an earlier unsuccessful breeding attempt at Paignton Zoo in the 1930s.

Looking through back issues for articles by or references to the late Kenneth Smith for a biography being prepared by Russell Tofts, in the first of three obituaries to Herbert Whitley by H. S. Stokes, Kenneth Smith and C. H. Trevisick the owner of Ilfracombe Zoo Park (Vol.61, No.6, pp.318-322 (1955)), I was surprised to read that a Red Bird-of-Paradise had hatched chicks at Paignton Zoo, but had evidently failed to rear them to independence. Clifford and Dawn Frith, who were then writing their book *Birds of Paradise: Nature, Art & History* (Frith&Frith, 2010), wanted to know more details, such as which year this breeding attempt occurred but, apparently, Whitley only kept records of his domestic animals - not his wild ones.

Following the death of Frank Woolham (who worked with Kenneth Smith at Belle Vue Zoo in the 1940s), his wife Meg sent me a few bits and pieces that she thought might be of interest to me, amongst which was a copy of a magazine called *The Foreigner* (Vol.4, Part 3, May-June 1937) published by Keston Foreign Bird Farm. It has an article on the King Bird-of-Paradise *Cicinnurus regius* by John Yealland (pp.105-106) in which he mentioned that Herbert Whitley had almost succeeded in breeding the Red Bird-of-Paradise - in 1936 - but, unfortunately, lost one chick at nine days old and the second chick at 12 days old.

* * *

RECENT ARRIVALS AT CHESTER ZOO

Recent arrivals at Chester Zoo include four Black-necked Weavers *Ploceus nigricollis*, Red-and-yellow Barbets *Trachyphonus erythrocephalus* and Brazilian Tanagers *Ramphocelus bresilius*, all from Copenhagen Zoo, Denmark. A male Collared Grosbeak *Mycerobas affinis* has arrived as a mate for the zoo's lone female and Brown Wood Owls *Strix leptogrammica* have arrived from the Cotswold Wildlife Park.

Keepers used a very realistic looking West African Black Crowned Crane *Balearica p. pavonina* puppet when rearing three chicks and to assist the conservation of the crane's West African coastal habitat, the zoo has provided £7,925 (approx. US\$12,000) as part of its support for *in situ* conservation initiatives.

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CONCERN OVER GREY PARROTS

David Waugh, Director of Loro Parque Fundación, reports that following the work of Melo and O’Ryan and additional work by BirdLife International’s Taxonomic Working Group, based on genetic, morphological, plumage and vocal differences, the African Grey Parrot has been split into two separate species: the Grey Parrot *Psittacus erithacus* and the Timneh Grey Parrot *P. timneh*. The latter, of course, having previously been regarded as a subspecies of the former.

Whereas estimates of the number of Grey Parrots in the wild vary from 680,000 to 13 million, it is believed there may be as few as 120,000 Timneh Grey Parrots remaining in the wild. Therefore, Loro Parque Fundación is financing a three to four years study which will attempt to assess its distribution and abundance and the impact of trade and habitat changes on the wild population, which is found from southern Guinea to Sierra Leone, Liberia, Mali and Côte d’Ivoire, west of the Comoé River.

Dr Waugh also expressed concern about the increased number of wild-caught Grey Parrots being exported from countries such the Democratic Republic of Congo and Guinea, both of which have exceeded their permitted quotas. The Democratic Republic of Congo is permitted to export 5,000 per year, but exported more than 12,000. The main destinations for legally caught Grey Parrots are South Africa (33%), the Middle East (27%), Serbia (22%) and Asian countries (17%). Many more, however, are thought to be exported illegally.

On December 24th 2010, 730 wild-caught adult Grey Parrots, part of a consignment of 1,650 of these parrots, caught in the Democratic Republic of Congo and exported to South Africa, were found dead in their crates, when the flight from Johannesburg landed at Durban. Ten more died later. The cause of death was unknown.

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BACK ISSUES

All future enquiries regarding back issues should be addressed to: Peter Stocks, Hon. Secretary and Treasurer, The Avicultural Society, Sheraton Lodge, Station Road, Southminster, Essex CM0 7EW. E-mail: otusscops@talktalk.net/Tel:01621 772427



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